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NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
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in its capacity as elected Office

Date of mailing (day/month/year) 20 October 1998 (20.10.98)	
International application No. PCT/GB98/00808	Applicant's or agent's file reference 03 31222
International filing date (day/month/year) 18 March 1998 (18.03.98)	Priority date (day/month/year) 27 March 1997 (27.03.97)
Applicant BRAMHILL, Ian, Duncan et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:25 September 1998 (25.09.98)☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 03 31222		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB98/00808	International filing date (day/month/year) 18/03/1998	Priority date (day/month/year) 27/03/1997	
International Patent Classification (IPC) or national classification and IPC G06F1/00			
Applicant BRITISH TELECOMMUNICATIONS P.L.C. et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 12 sheets, including this cover sheet.



- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

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Date of submission of the demand 25/09/1998	Date of completion of this report 24.06.99
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0 Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer Quesson, C Telephone No. (+49-89) 2399 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB98/00808

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):-

Description, pages:

1-19 as originally filed

Claims, No.:

1-27 as originally filed

Drawings, sheets:

1-8 as received on 06/04/1998 with letter of

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 19-21,27.

because:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB98/00808

- ☒ the said international application, or the said claims Nos. 21 relate to the following subject matter which does not require an international preliminary examination (*specify*):

see separate sheet

- ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 19-21,27 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

- ☐ no international search report has been established for the said claims Nos. .

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
☐ paid additional fees.
☐ paid additional fees under protest.
☒ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
☒ not complied with for the following reasons:

see separate sheet

- ~~4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:~~

- ☐ all parts.
☒ the parts relating to claims Nos. 1-18.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB98/00808

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-18
	No:	Claims	
Inventive step (IS)	Yes:	Claims	18
	No:	Claims	1-17
Industrial applicability (IA)	Yes:	Claims	1-18
	No:	Claims	

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB98/00808

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. Claims 19-21 and 27 are excluded from the international preliminary examination under Article 34(4)(a)(ii) PCT, because the International Preliminary Examining Authority considers that these claims are unclear and do not adequately define the technical features of the subject matter to be protected, such that no meaningful opinion can be formed on the novelty, inventive step (non-obviousness), or industrial applicability, of the claimed subject matter.

Attention is drawn in this respect to the Guidelines, C-II 3.7.a, according to which a claim may contain a reference to another claim even if it is not a dependent claim as defined in Rule 6.4. One example of this is a claim referring to a claim of a different category (e.g., "Apparatus for carrying out the process of Claim 1 ...", or "Process for the manufacture of the product of Claim 1 ...").

In such cases it should be clear to which extent the claim containing the reference necessarily involves all the features of the claim referred to and to which extent it does not.

In general, the fact that the claim referred to contains novel and inventive matter does not necessarily imply that the same is also true of the independent claim containing the reference.

In the present case it is first noted that the reference in claims 20-21 should read "a method as claimed in claims 1-18" rather than "a method as claimed in any preceding claim", since claim 19 at least is not a method claim.

Moreover, and although the respective categories of claims 19-21 and 27 are partially not clear, it is held that the present formulation of claims does not precisely define limitations of the claimed server, initiation, copy protected data and client, respectively, because these claims contain solely a vague reference to the method claims. For example, Claim 19 ("server configured to perform a method...") must be understood as covering in effect any server computer suitable for performing the method, which is not a sufficient definition.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB98/00808

As to claim 20, it is not clear whether that claim ("Initiation" ?) is directed

- to a "Method for downloading, by the client, of ", in which case claim 20 is redundant with claims 22-26, or
- to the "Use of the client "; in that case it is noted that the client itself is not defined by any explicit features, but only by reference to the method claims; this "reference of reference" renders the subject matter of claim 20 unclear.

Claims 19 and 28 are not clear, because the mere formulation "configured to perform a method as claimed ..." does not suffice to define which technical features must be provided to enable the server/client to perform the respective method.

Claim 21 is not clear, because its introductory statement is directed to "copy protected data", which amounts to claim protection for the content of information rather than for the physical entity (server, client) or the activity (method of copy protecting or of downloading copy-protected data) specifically disclosed in the description.

2. Claims 21 is excluded from the international preliminary examination under Article 34(4)(a)(i) PCT, because the International Preliminary Examining Authority considers that this claim - since it is directed to ".. data stored on the client .." is similar to a subject matter on which the International Preliminary Examining Authority is not required, under the Regulations, cf. Rule 67.1.v) ("presentation of information ..."), to carry out an international preliminary examination, and in the particular case decides not to carry out such examination, see also the PCT Guidelines, C-IV.2, in particular C-IV.2.4e) ("information recorded on a carrier", as distinguished from an arrangement or process).

This subject matter is also considered as non-patentable in at least some of the national or regional laws of the designated states.

Re Item IV

Lack of unity of invention

1. The International Preliminary Examination Authority considers that the requirement of unity of invention (Rule 13 PCT) is not met. The separate inventions/groups of invention are: - Claims 1-18: Method of copy protecting data sent from a server to a client; - Claims 22-26: Method of downloading encrypted data from a server to a client' including registering the client with the server.
 2. They are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:
 - 2.1 Independent claim 1 is directed to a method of copy protecting data sent in cryptographically protected form from a server to a client by selectively controlling copying functions of the client. No mention is made of registering the client with the server. The claimed features solve the objective problem of allowing the owner of data available on a server, e.g. copyright works which are displayed on HTML pages, to avoid that his works, e.g. a graphics file, may be readily copied on a client's computer and replicated without significant degradation.
 - 2.2 Independent claim 22 refers to a method of downloading encrypted data from a server to a client, including registering the client with the server by means of unique determinator based on a machine identifier of the client. This solves the problem (cf. p.16, l. 20) of how an individual key can be provided for registering a client with a server and, as indicated at the last paragraph of page 19, may be used for other authentication processes (than that of claim 1). The claim does not contain the special technical features mentioned in point 2.1.
 3. In conclusion, the two independent claims are not linked by a special technical feature nor by a single general inventive concept. Hence the application does not meet the requirements of Unity of Invention as defined in Rule 13(1)&(2) PCT.
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4. As apparent from the search report, the search has been performed on all claims of the international application.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB98/00808

5. Since the applicant has neither paid additional fees nor restricted the claims following the official invitation, the present examination report has been established on claims 1-18 which are considered as the "main invention", see the Guidelines C-VI 5.6.

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Related prior art

Reference is made to the following documents/; the numbering will be adhered to in the rest of the procedure:

D1: YOURDON E: "JAVA, THE WEB, AND SOFTWARE DEVELOPMENT"
COMPUTER, vol. 29, no. 8, August 1996, pages 25-30, XP000632764;

D2: DEAN D ET AL: "JAVA SECURITY: FROM HOTJAVA TO NETSCAPE AND BEYOND" PROCEEDINGS OF THE 1996 IEEE SYMPOSIUM ON SECURITY AND PRIVACY, OAKLAND, CA., MAY 6 - 8, 1996, no. SYMP.17, 6 May 1996, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, pages 190-200, XP000634844;

D3: WO-A-9407204

D4: US-A-5235642

D5: EP-A-0718761

D6: BENDER W ET AL: "TECHNIQUES FOR DATA HIDING" IBM SYSTEMS JOURNAL, vol. 35, no. 3/04, 1996, pages 313-335, XP000635079;

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- 1.1. The D1 paper, which is considered as the closest prior art document for claims 1 -18, deals with security on the Internet (see the item "Security" on page 28), and submits that applications should ensure "secure access to functionality and data, as well as secure transmission of data across the Internet". Adding digital

signatures to applets is contemplated, such that a user can be sure of the source and origin of a downloaded applet. As typical for a client server application, a password may be asked "to determine the end user's authorisation to invoke certain functionalities of access certain data", and "the application will interact with the browser to encrypt/decrypt transmissions between the client and the server". The paper further proposes to integrate encryption packages like PGP into Internet applications and achieve higher security with a public key password system.

- 1.2. The D2 article deals (see in particular the passages cited in the search report) with the security issues raised in Web browsers such as HotJava and Netscape by server supplied code constituted by Java applets downloaded to and run inside the Web browser. "In Netscape, Java applets can name only those functions and variables explicitly exported to the Java subsystem". This paper further suggests that Java would be more secure if encryption and/or a crewel were used.
- 1.3. D4 proposes to achieve access control using copies of clients credentials cached at the server for future use. The security system includes a computer at each node of the distributed system with a trusted computing base that includes an authentication agent for authenticating requests received from principals at other nodes in the system. Requests are transmitted to servers as messages that include a first identifier (Auth ID) provided by the requester and a second identifier (called the subchannel value) provided by the authentication agent of the requester node. Each server process has an associated local cache that identifies requesters whose previous request messages have been authenticated. When a request is received, the server checks the request's two identifiers against the entries in its local cache. If there is a match, the request is known to be authentic, without having to obtain authentication from the requester's node.
- 1.4. D6 relates to steganography/ watermarking.

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2. Although no full examination can be conducted, it would appear that claims 1-17 (first invention) do not fulfill the criteria of Article 33 (1)PCT, because their subject matter lacks an inventive step with respect to the prior art documents analysed above, at least when taken in combination, for the following reasons :

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB98/00808

- 2.1. According to pages 1-2, the general problem addressed by the application consists essentially in providing a method allowing the owner of data available on a server, e.g. copyright works which are displayed on HTML pages, to avoid that his works, e.g. a graphics file, may be readily copied on a client's computer and replicated without significant degradation.
- 2.2. Methods and systems for ensuring security of functionality and data in a client-server environment - in particular in the Internet - are known, see D1 and D2. However these documents do not directly address the specific problem of protecting from copying data which have been downloaded from a server to a client, nor its solution claimed in claim 1. Hence the subject matter of claim 1 is new against D1 and D2.
- 2.3. It is held, nevertheless, that the skilled person confronted with the above specific problem, would need no inventive activity to infer from the general teaching of D1 ("to determine the end user's authorisation to invoke certain functionalities of access certain data") and/or D2 ("applets can name only those functions and variables explicitly exported to the Java subsystem"), at least when taken in combination, that a solution consists in selectively controlling copying functions of the client in respect of the downloaded data, hence arriving at the subject matter of claim 1.

Since encryption is also proposed by both D1 and D2, and hashing is known in the art as a similar security measure ensuring integrity of data - D1 also suggests hashing by proposing to add signatures to information downloaded from the Web such that the receiving side can be sure of its source and origin, thus of its integrity -, the matter of claims 2-4 does not appear to involve an inventive step.

The same reasoning applies for identifying/authorizing/registering the client to the server (claims 5, 6, 17), which are also taught by D1 (password, public key password system) and D3-D4.

The downloading of a program (claims 7-8) is known per se (see specifically D5), the features of claims 9-13 appear to belong to general knowledge in the art, as well as the use of a cryptographic key (claims 14-15). Steganographically marking data (claim 16) is known in the art (see D6).

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB98/00808

3. The application does not meet the requirements of Article 33(2) and (3) PCT, because the systems/methods of D1-D2, D4 and D6 anticipate, at least when taken in combination, the features claimed in claims 1-17.
4. It would appear that the combination of the features of dependent claim 18, as dependent on claim 15, itself as dependent on claim 7, is neither known from, nor rendered obvious by, the available prior art.
Hence it appears that a allowable independent claim could have been drafted to include these features, although it is not clear how to formulate the precise technical problem encountered with the prior art that the features of such an amended method claim would overcome.

Re Item VII

Certain defects in the international application

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document/s D1-D2, D4 and D6 is/are not mentioned in the description, nor is/are this/these document/s identified therein.
The introduction to the description should also have
 - more clearly identified the problem to be solved by the present invention;
 - specified the technical differences between the prior art and the subject matter of the claims; and
 - indicated how these differences provide the solution to the problem to be solved.
2. Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art being placed in a preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT).

The applicant has not provided reasons why the claim should not be in the two-part form. Neither did he clearly indicate in the description which feature/s of the subject-matter of claim 1 is/are already known from the prior art; see PCT Guidelines PCT/GL/3 III, 2.3a.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB98/00808

Re Item VIII

Certain observations on the international application

1. The /vague and imprecise/ statement in the description on the paragraph bridging pages 15-16 ("scope of invention") implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them (see also the PCT Guidelines, PCT/GL/3 III, 4.3a).
2. The features of the claim/e are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).